

# Lake Forrest Dam Project Update

October 1, 2019



**SANDY SPRINGS™**  
GEORGIA

# Background

- Dam is at least 60, possibly 80 years old
- 2009: Identified by Georgia DNR as Category I Dam (Probable loss of life from dam failure)
  - EPD identified five (5) dam owners who are responsible for bringing the dam into compliance with the Georgia Safe Dams Program:
    - City of Atlanta
    - City of Sandy Springs
    - Three Lakes Corporation
    - Two individual property owners in Sandy Springs
  - Municipal boundary between Atlanta and Sandy Springs splits the dam. Lake Forrest Drive crosses over the dam

# Background Continued

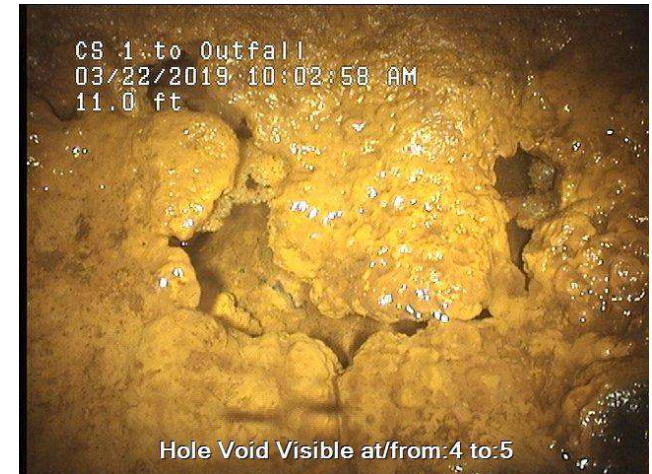
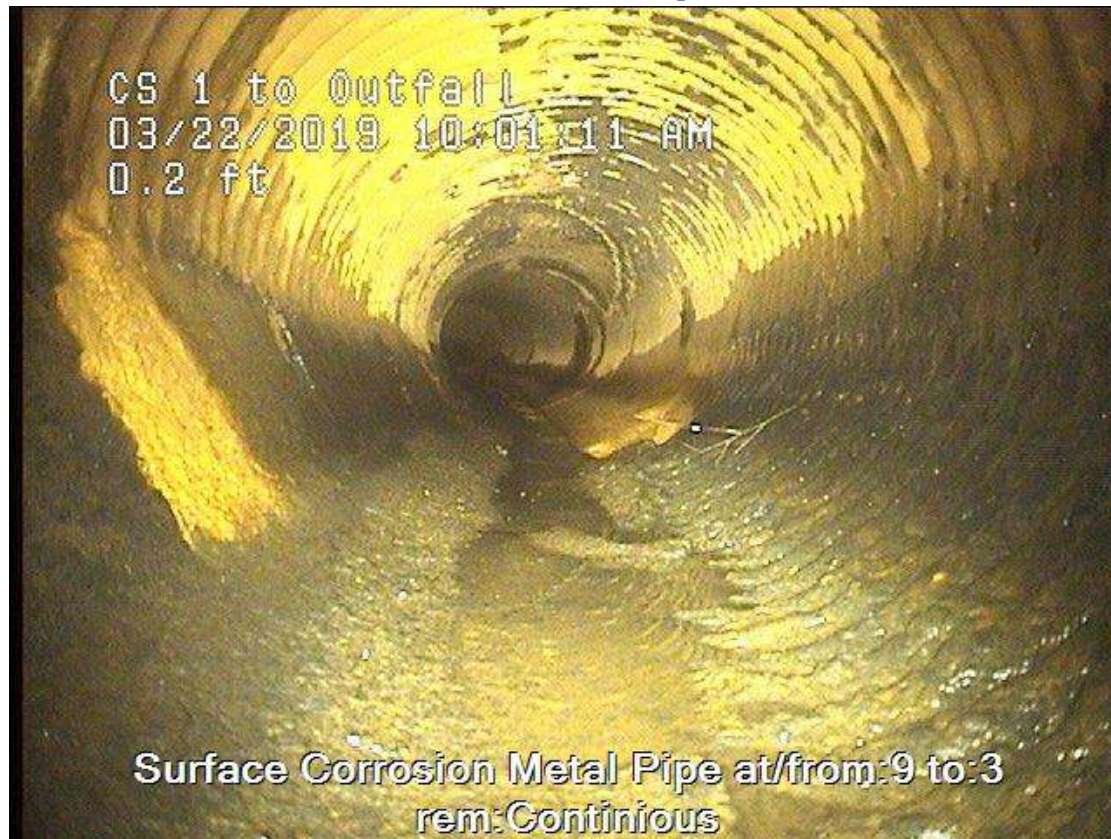
- City of Sandy Springs engaged Schnabel Engineering as Engineer Of Record
- May 2012: Preliminary Engineering Evaluation Report prepared
- May 2013: Monitoring wells installed to observe groundwater and seepage
- June 2015: Intergovernmental Agreement between City of Atlanta and City of Sandy Springs with the two cities sharing jointly in addressing improvements, repairs and/or alterations or other long-term options to bring dam into compliance
- 2015 into 2016: Emergency drawdown of water from lower lake conducted to avoid potential breach of dam. City performing regular inspections of dam.
- August 2016 to 2017: Extensive preliminary engineering work done for design alternative analysis pursuant to EPD's demands and to prevent litigation.
- April 2017: Alternative Analysis Report Published
- September 2017: Dam update to Council with plan to coordinate with other dam owners

# Condition of the Dam



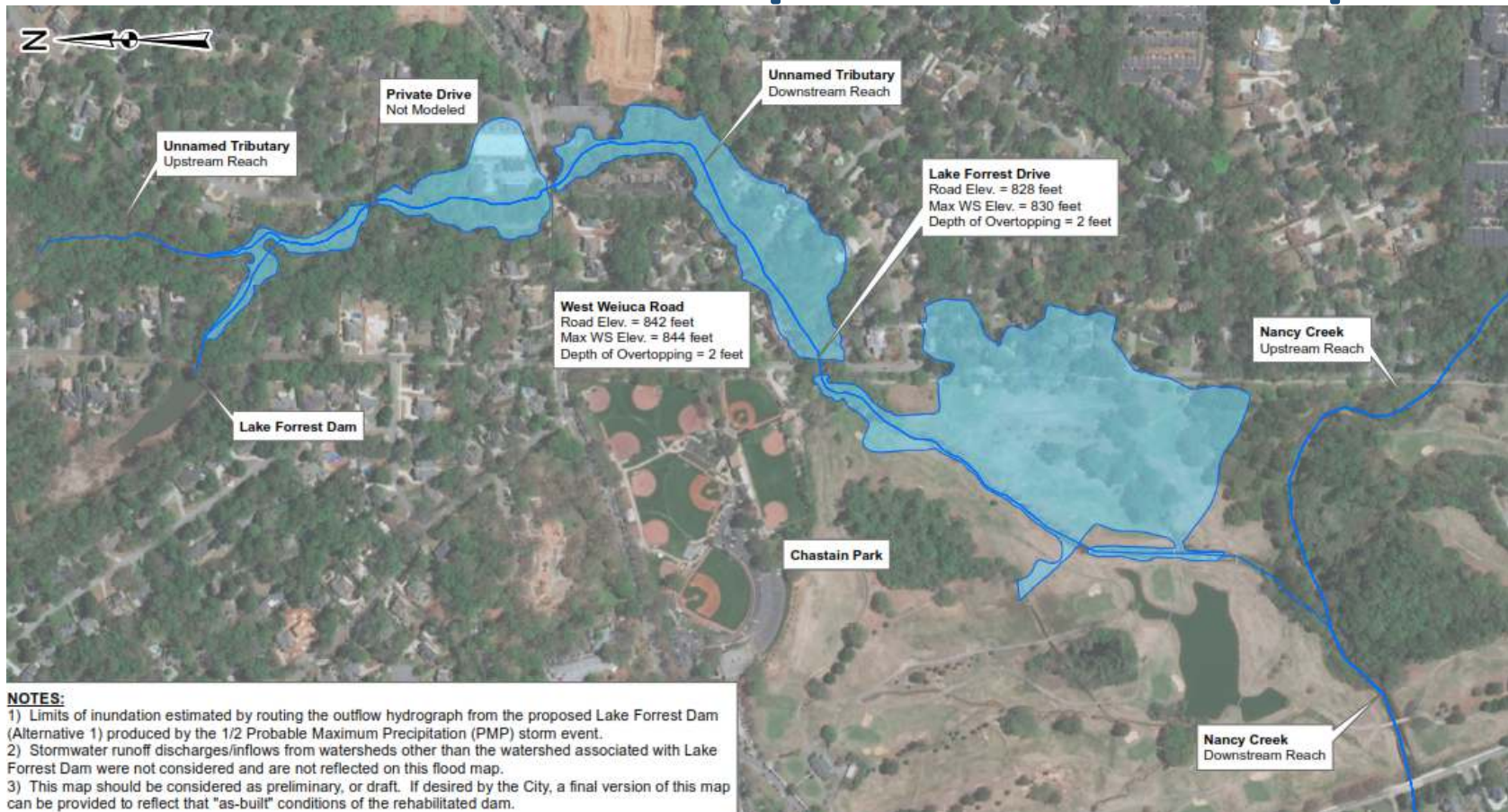


# Condition of the Pipe





# Probable Maximum Precipitation Flood Map



# Design Alternative Considerations

We reviewed various design alternatives prepared by the consultant. The review included considerations such as:

- Cost effectiveness
- Impacts
  - Environmental
  - Property
- Traffic
- Project timeline
- Overall safety considerations
- Regulatory requirements (federal, state and local)

As a result of these considerations, Sandy Springs staff recommended consideration for two design options to further evaluate and coordinate with all dam owners:

- Full pool option
- Reduced lake level option

# Full Pool Alternatives

- Description
  - Remediation of existing dam
  - Labyrinth spillway or drop box spillway with box conduits under Lake Forrest Drive
  - **Normal pool set at same elevation as historic elevation (pre-lowering of lake level elevation = 916')**
- Temporary Impacts
  - Road closure & detour for duration of project
  - Construction staging and noise
  - Temporary construction easements required on surrounding properties
- Cost Estimate
  - Preliminary Cost Estimate: \$4,857,000 (Assuming 15 month construction schedule)
- Other Considerations
  - Affected property owners donate permanent easement
  - Property acquisitions near dam
  - Annual operation and maintenance costs of dam
  - Contributions from other dam owners (monetary or non-monetary)
  - Risk of lawsuits





## Full Pool Alternative – (Example)



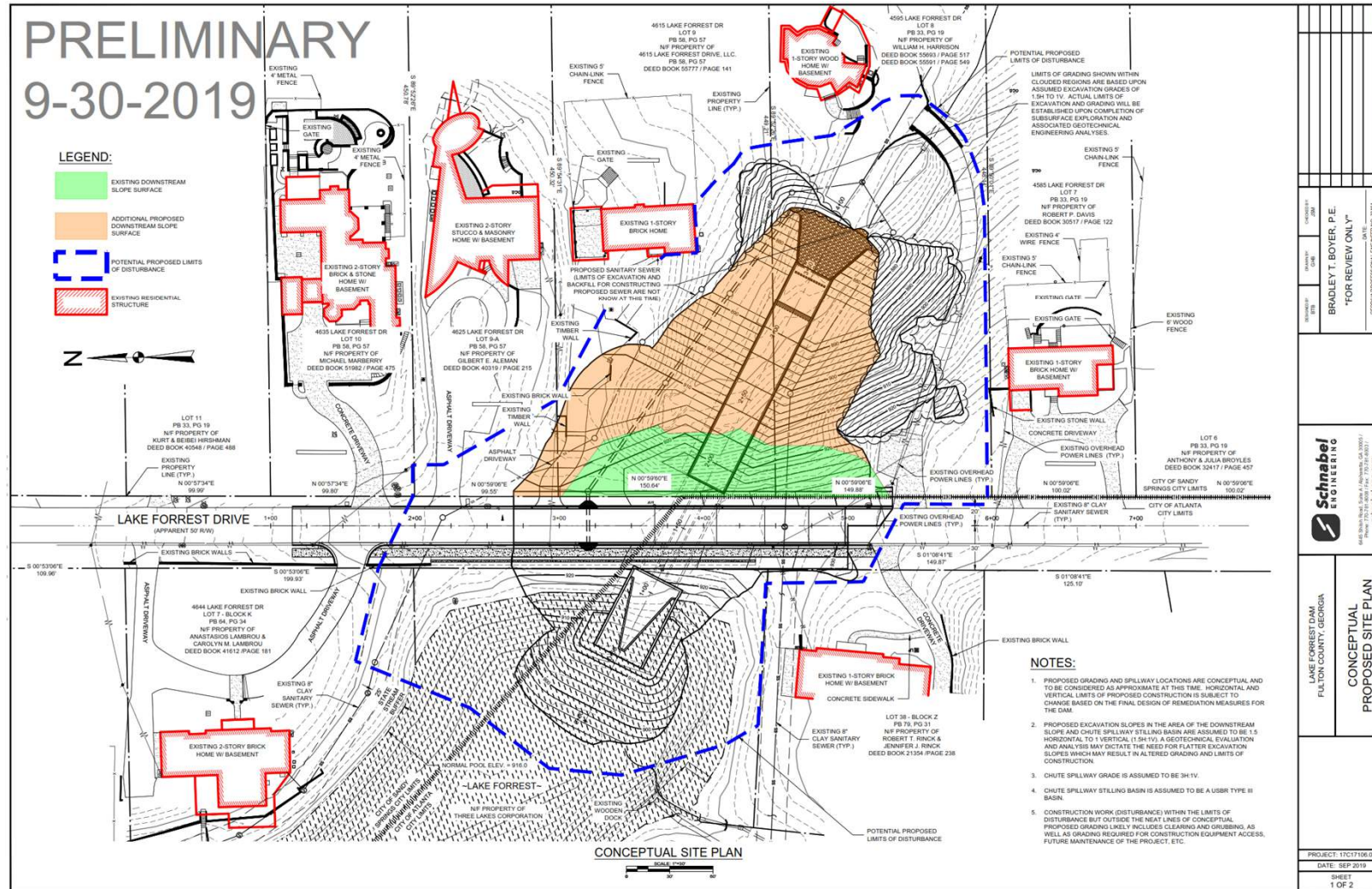
# Reduced Lake Level Alternative

- Description
  - Construction of new earthen dam immediately upstream of Lake Forrest Drive
  - Existing dam replaced with box culverts or bridge at Lake Forrest Drive
  - **Normal pool 12 feet lower than historic lake elevation**
- Temporary Impacts
  - Road closure & detour required for box culverts or bridge construction
  - Construction staging and noise
  - Temporary construction easements required within lake bed & downstream
- Cost Estimate
  - Preliminary Cost Estimate: \$5,854,000 to \$6,953,000 (Assuming 18 month construction schedule)
  - Costs will vary depending on whether bridge or culverts are constructed
- Other Considerations
  - Permanent easements required within lake bed - **Lake level to be permanently lowered**
  - Annual Operation and Maintenance costs
  - Ownership of new structures/facilities
  - Contributions from other dam owners (monetary or non-monetary)
  - Risk of lawsuits



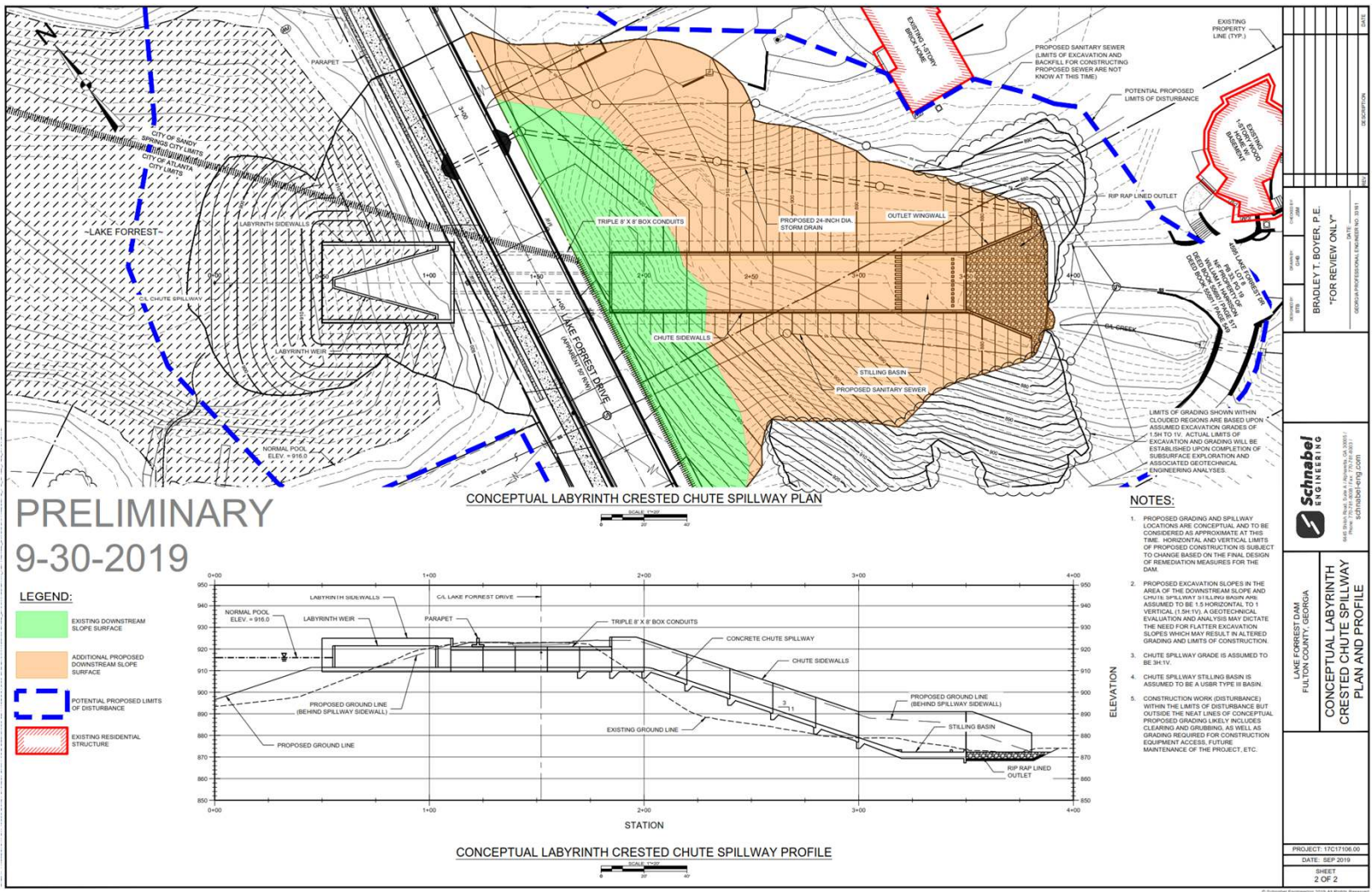


# Preliminary Labyrinth Spillway – Site Plan





# Preliminary Labyrinth Spillway – Plan & Profile



# Subsequent Coordination with Owners

Cooperation and coordination has been underway with the Three Lakes Corporation with the understanding that they desire a Full Pool solution

City of Atlanta has concurred with a Full Pool solution, indicating a labyrinth spillway alternative as their preference

The two downstream property owners identified by GA DNR as dam owners have refused to participate in discussions related to the dam or its reconstruction

# Actions since September 2017 Update

- December 2017: Interim Emergency Action Plan prepared
- April 2018: Peer-Review of Alternative Analysis Report performed by a third party consulting firm
- June 2018: Cost Validation Study prepared with Independent Contractors
- January 2019: Dam Breach Analysis and Sensitivity Analysis Studies performed
- March 2019: Mandatory biennial dam inspection performed—Engineer recommends temporary repair measures
- May 2019: Field run survey of affected properties around the lake performed
- July 2019: Individual plats of survey and legal descriptions for affected properties around the lake prepared
- August 2019: Plans and Specifications for Temporary Repair Measures produced
- August 2019: A Notice of Violation letter and a Draft Consent Agreement from GA EPD received by City of Atlanta (COSS letter enroute)
- September 2019: GA EPD first proposed Consent Agreement in negotiation



## Schnabel's Preliminary Summary of Construction Costs and Design Fees

Concept	Description	Est. Const. Costs	Design & Permitting Costs	Est. Total Costs
Full Pool	Labyrinth Spillway including Transportation Construction Costs	\$4.1M	\$757k	\$4.8M

Listed budget estimates above do not include costs related to construction observations, land/easement acquisition, temporary onsite or offsite detours/traffic control, and unknown utility relocations.

# Proposed Schedule

Final Design & Engineering – 8 months

Safe Dams review and permitting – 4 months

Procurement process – 4 months

Construction – 15 months

Total time = 31 months

# Current Concerns

- Georgia Environmental Protection Division Notice of Violation and draft Consent Agreement - Pending
- Easement documents :
  - Three Lake Corporation Full-Pool High-Water Mark (Lack 1 of 15)
  - Temporary Construction (Lack 2)
  - Backside of the dam easements lacking
- Temporary Repair Measures permitting & Construction
  - Injection grouting;
  - Lining invert of principal spillway;
  - Lowering lake level
- Georgia EPD Application for Dam Construction & Operation Permit



## Next Steps in Coordination

1. Obtain required survey data (complete except one lakeside property)
2. Execute agreements with Three Lakes Corporation and members
3. Coordinate agreements with backside dam owners
4. Provide interested stake-holder update(s)
5. Get concurrence from Council on preferred design option and update on coordination and project delivery – award engineering service
6. Execute interim safety measures
7. Obtain full construction permit, right of way and utility agreements
8. Procure construction contractor to rehabilitate dam